

Notice of Allowability

Application No.

10/824,101

Examiner

William C. Choi

Applicant(s)

NITO ET AL.

Art Unit

2873

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to after final amendment filed 3/17/2006.
2. ☒ The allowed claim(s) is/are 20,23,24,30,31,49,52-60,87,90,91,96-98,125 and 128-136.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/711,651.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Bicky Mack
BICKY MACK
SUPERVISORY PATENT EXAMINER

All claims pending thus being allowable, prosecution on the merits is closed in this application. A statement of the examiner's reasons for allowance is provided in the paragraphs, which follow below.

REASONS FOR ALLOWANCE

Claims 20, 23, 24, 30, 31, 49, 52-60, 87, 90, 91, 96-98, 125 and 128-136 are allowed.

The instant application is deemed to be directed to a nonobvious improvement over the invention of Hatano (U.S. 6,549,185 B1), as being a representative example in the art to which the instant invention pertains. In particular, said improvement provides a light modulation apparatus capable of improving the transmittance, enhancing the contrast ratio, and keeping constant the quantity of light.

More specifically, independent claim 20 is drawn to a light modulation apparatus comprising a liquid crystal device and a pulse control unit, wherein the pulse height or pulse width of a first drive pulse of at least two drive pulses is greater than that of the second drive pulse as claimed, specifically further comprising a polarizing plate that is movable into and out of an optical path of light made incident on said liquid crystal device (Claim 20, lines 6-7).

Similarly, independent claim 49 is drawn to an image pickup apparatus comprising a light modulation apparatus including a liquid crystal device and a pulse control unit as claimed, specifically wherein said control unit sequentially applies at least two distinct drive pulses wherein said first pulse height or width is greater than that of

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the second pulse and wherein said light modulation apparatus is disposed in an optical path of an optical system of said image pickup apparatus (Claim 49, lines 6-7 & 11-12).

Independent claim 87 is drawn to a method of driving a light modulation apparatus including a liquid crystal device comprising the steps of sequentially applying at least two distinct drive pulses as claimed, specifically wherein said apparatus includes a polarizing plate that is movable into and out of an optical path of light made incident on said liquid crystal device and wherein the first pulse height or width is greater than that of the second pulse (Claim 87, lines 6-8 & 12-13).

Finally, independent claim 125 is drawn to a method of driving an image pickup apparatus in which a liquid crystal device of a light modulation apparatus is disposed in, comprising changing the transmittance of incident light on said liquid crystal device by sequentially applying at least two distinct drive pulses to said device as claimed, specifically wherein said first pulse height or width is greater than that of the second pulse and wherein said light modulation apparatus is disposed in an optical path of an optical system of said image pickup apparatus (Claim 125, lines 2-3 & 11-12).

The prior art taken either singly or in combination fails to anticipate or fairly suggest the limitations of applicant's independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The claimed invention is therefore considered to be in condition for allowance as being novel and nonobvious over prior art.

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OTHER REMARKS/INFORMATION

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W-C
William Choi
Patent Examiner
Art Unit 2873
April 12, 2006


RICKY MACK
SUPERVISORY PATENT EXAMINER